UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,396	09/23/2003	Christopher Lawrence Brealey	CA920030053US1	3959

25259   7590   09/19/2008
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ART UNIT	PAPER NUMBER
2194	

NOTIFICATION DATE	DELIVERY MODE
09/19/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 July 2008</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-4,6-15,24 and 26</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-4, 6-15, 24 and 26</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>23 September 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some *   c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date <u>9/23/03</u>.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-4, 6-15, 24 and 26 are pending in the application.

Claim Objections

2.   Claim 15 is objected to because of the following informalities:

On line 7, "wherein said second module comprising" should read --wherein said second module

encapsulates-- or -- wherein said at least one communication operation comprises--. Appropriate

correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

4.   Claims 24 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

5.   Claim 24 is a system claim directed to software alone without claiming associated

computer hardware required for execution (i.e. a system comprising module codes). The

examiner suggests incorporating computer hardware such as a processor and memory as

disclosed in the specification [2005/0034097, paragraphs 22-23] to store the various codes for

execution by the processor to overcome the current rejection. Claim 26 depends on claim 24 and

failed to satisfy the hardware requirement of claim 24, therefore claim 26 is rejected for the same

reason.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1-3, 15, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by

Friedman et al. (hereafter Friedman) ("Problem Solving, Abstraction, and Design Using C++").

8.   As to claim 15, Friedman teaches a computer readable medium storing thereon computer

executable instruction code, said code when executed by a processor of a computer causes said

processor to [compile, link and execute program stored in memory, pgs. 9 and 27]:

execute a first module encapsulating a computer algorithm except at least one

communication operation of said algorithm [member functions of Circle class, Fig. 11.8, pgs.

514-515]; and

execute a second module encapsulating said at least one communication operation

of said algorithm, such that said at least one communication operation is available to said first

module [driver function for inputting/setting various attributes of the circle and outputting

corresponding result, Fig. 11.7, pg. 513], wherein said second module comprises at least one

environment-dependent communication operation of said algorithm and is configured to communicate with a communicating partner [modification to the driver function such as soliciting user input or setting different input parameters to set circle functions, Fig. 11.7, pg. 513] (examiner's interpretation of the computer readable medium as including statutory medium such as a magnetic storage, optical storage, solid state storage, etc. only as suggested in applicant's specification [2005/0034097, paragraphs 22-23] and excluding all non-statutory storage such as carrier waves or signal).

9.   As to claim 1, this claim is rejected for the same reason as claim 15 above. In addition, Friedman teaches instantiating at least one data object for encapsulating data communicated between said first module and a communicating partner, each one of said at least one data object being an instance of a data class, said data communicated between said first module and said communicating partner being accessible by said first module [my_circle is an object of class circle instantiated in the driver function for passing parameters to member functions of class circle, Fig. 11.7, pg. 513].

10.   As to claims 2-3, Friedman teaches wherein said at least one communication operation comprises at least one environment-dependent communication operation of said algorithm and wherein said at least one environment-dependent communication operation comprises all environment-dependent communication operations of said algorithm [setting circle attributes, compute area and perimeter and display circle attributes, if changes need to be made to driver function, circle class would not be affected, Fig. 11.7, pg. 513] (since applicant's specification

failed to specifically define nor preclude the limitation "environment-dependent communication

operation" the examiner's interpretation of "environment-dependent communication operation"

as any dependent relationship among software functions and classes).

11.   As to claim 24, this claim is rejected for the same reason as claim 15 above. In addition,

Friedman teaches wherein one of said first and second module codes can be modified without

changing the other one of said first and second module codes [fundamental concept of

encapsulation and information hiding, pg. 469].

12.   As to claim 26, Friedman teaches wherein each one of said first and second module codes

implements a common protocol so that said first and second module codes are compatible

[calling member functions by passing data of the required data type, Fig. 11.7, pg. 513].

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

14.   Claims 4 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Friedman as applied to claim 1 above.

15.   As to claim 4, Friedman does not specifically teach executing a third module

encapsulating another communication operation of said algorithm. However, Friedman

disclosed the advantages of using subordinate functions to separately implement a program

[separately implementing draw_circle, draw_triangle and draw_intersect, pgs. 113-119]. It

would have been obvious for a person of ordinary skill in the art at the time the invention was

made to separately implement a module to be executed as part of an algorithm given the

importance of information hiding/encapsulation in application development and because of the

ease of separately coding small parts of a large program in comparison to coding the entire

program at once as being considered by Friedman [advantages of using functions, pg. 119].

16.   As to claim 6, this claim is rejected for the same reason as claim 1 above. In addition,

Friedman does not specifically teach wherein data <u>from</u> said first module is encapsulated in a

first data object being an instance of a first data class. However, Friedman teaches

communication among multiple classes [Figures program that includes the circle, square and

rectangle classes, pg. 706]. It would have been obvious to one of ordinary skill in the art at the

time the invention was made given if there are two way communications among the different

classes of Friedman that data encapsulated in a data object to a respective module (function or

class) would be an instance of an originating data class that is different in comparison to data

encapsulated in a data object from the respective module in order for any communication to

occur.

17.   As to claim 7, Friedman teaches substantially wherein said second module comprises a

communication object, said communication object being an instance of a communication class

[my_circle is an object of class circle instantiated in the driver function, implementation of member function display_circle, Figs. 11.7-11.8, pgs. 513-515].

18.   As to claim 8, Friedman teaches substantially wherein said first module comprises a command object, said command object being an instance of a command class [my_circle is an object of class circle instantiated in the driver function, calling member functions for setting attributes, Fig. 11.7, pg. 513].

19.   As to claims 9-11, Friedman does not specifically teach the limitations as recited. However, communication among software modules (functions or classes) based on compatibility and governed by a set of protocol are nonetheless the basic principle of object-oriented programming, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made having basic knowledge of object-oriented programming to program the various classes and communication among various classes specific to the problem that was intended to solve as being considered by Friedman [software development method, pgs. 19-23].

20.   As to claims 12-14, these claims are rejected for the same reason as claim 7 above.

21.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,966,531 to Skeen et al. teach modular programming.

22.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Qing-Yuan Wu whose telephone number is (571)272-3776. The

examiner can normally be reached on 8:30am-6:00pm Monday-Thursday and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/   /Qing-Yuan Wu/
Supervisory Patent Examiner, Art Unit 2195   Examiner, Art Unit 2194